CLAIMS

What is claimed is.

1. An article comprising:

a mounting substrate;

a passive component site on the mounting substrate;

an active component site on the mounting substrate; and

a fluid flow barrier disposed local to the passive component site and spaced apart from the active component site.

2. The article of claim 1, the mounting substrate including a first side and a second side, wherein the passive component site and the active component site are disposed in a solder mask on the first side, and wherein the fluid flow barrier is integral with the solder mask.

3. The article of claim 1, wherein the fluid flow barrier includes a sidewall and a floor, wherein the floor includes an electrically conductive material.

4. The article of claim 1, the mounting substrate including a first side and a second side, wherein the passive component site and the active component site are disposed in a solder mask on the first side, wherein the fluid flow barrier is a trench in the solder mask, and wherein the trench describes a perimeter around the passive component site.

5. The article of claim 1, the mounting substrate including a first side and a second side, wherein the passive component site and the active component site are disposed in a solder mask on the first side, wherein the fluid flow barrier is a trench in the solder mask, wherein the trench describes a perimeter around the passive component site, wherein the perimeter includes a trench side that is adjacent and spaced apart from the active component site, and wherein the trench side that is

adjacent and spaced apart from the active component site includes a non-linear boundary.

6. The article of claim 1, the mounting substrate including a first side and a second side, wherein the passive component site and the active component site are disposed in a solder mask on the first side, wherein the fluid flow barrier is a trench in the solder mask, wherein the trench describes a perimeter around the passive component site, wherein the perimeter includes a trench side that is adjacent and spaced apart from the active component site, wherein the trench side that is adjacent and spaced apart from the active component site includes a non-linear boundary, and wherein the non-linear boundary is selected from curvilinear, rectilinear, and combinations thereof.

7. The article of claim 1, wherein the passive component site is spaced apart a distance from the active component site in a range from about 5 mm to about 1 mm.

8. The article of claim 1, wherein the passive component site is spaced apart a distance from the active component site by about 1.7 mm.

9. The article of claim 1, further including at least one fluid flow barrier that is disposed general to the active component site.

10. The article of claim 1, wherein the at least one fluid flow barrier includes a trench with a dielectric floor.

11. A packaging system comprising:

a mounting substrate;

a first passive component site on the mounting substrate;

a first active component site on the mounting substrate;

a fluid flow barrier disposed local to the passive component site and spaced apart from the active component site;

a first active component disposed at the first active component site;

a first passive component disposed at the passive component site; and

an encapsulation material disposed contiguous the active component and extending away therefrom.

12. The packaging system of claim 11, wherein the first active component is selected from a processor, a data storage device, a digital signal processor, a micro controller, an application specific integrated circuit, and a microprocessor.

13. The packaging system of claim 11, wherein the first passive component is one of a plurality of passive components, and wherein each of the plurality of passive components is disposed spaced apart from the first active component in a distance range from about 1 mm to about 5 mm.

14. The packaging system of claim 11, further including at least one of an input device and an output device.

15. The packaging system of claim 11, further including at least one of an input device and an output device, and wherein the computing system is disposed in one of a computer, a wireless communicator, a hand-held device, an automobile, a locomotive, an aircraft, a watercraft, and a spacecraft.

16. The packaging system of claim 11, wherein the encapsulation material terminates in a convex meniscus profile at the fluid flow barrier.

17. The packaging system of claim 11, wherein the fluid flow barrier includes a sidewall and a floor, wherein the floor includes an electrically conductive material.

18. The packaging system of claim 11, the mounting substrate including first side and a second side, wherein the passive component site and the active component site are disposed in a solder mask on the first side, wherein the fluid flow barrier is a trench in the solder mask, and wherein the trench describes a perimeter around the passive component site.

19. The packaging system of claim 11, the mounting substrate including first side and a second side, wherein the passive component site and the active component site are disposed in a solder mask on the first side, wherein the fluid flow barrier is a trench in the solder mask, wherein the trench describes a perimeter around the passive component site, wherein the perimeter includes a trench side that is adjacent and spaced apart from the active component site, and wherein the trench side that is adjacent and spaced apart from the active component site includes a non-linear boundary.

20. The packaging system of claim 11, the mounting substrate including first side and a second side, wherein the passive component site and the active component site are disposed in a solder mask on the first side, wherein the fluid flow barrier is a trench in the solder mask, wherein the trench describes a perimeter around the passive component site, wherein the perimeter includes a trench side that is adjacent and spaced apart from the active component site, wherein the trench side that is adjacent and spaced apart from the active component site includes a non-linear boundary, and wherein the non-linear boundary is selected from curvilinear, rectilinear, and combinations thereof.

21. A method comprising:

forming an active component site and a passive component site in a substrate, wherein the active component site and the passive component site are spaced apart; and

forming a fluid flow barrier local to the passive component site and spaced apart from the active component site.

22. The method of claim 21, further including:

installing an active component at the active component site;

installing a passive component at the passive component site; and

forming an encapsulation structure contiguous the active component and extending away therefrom.

23. The method of claim 21, wherein forming an encapsulation structure includes flowing encapsulation material under conditions that cause the encapsulation material to terminate at the fluid flow barrier.

24. The method of claim 21, wherein forming an encapsulation structure includes flowing encapsulation material under conditions that cause the encapsulation material to terminate in a convex meniscus profile at the fluid flow barrier.

25. The method of claim 21, wherein forming a fluid flow barrier local to the passive component site includes forming the fluid flow barrier perimeter to divert flow of the encapsulation material.

26. The method of claim 21, wherein forming an encapsulation structure includes flowing encapsulation material under conditions that cause the encapsulation material to terminate in a convex meniscus profile at the fluid flow barrier, and wherein forming a fluid flow barrier local to the passive component site

includes forming the fluid flow barrier perimeter to divert flow of the encapsulation material.

27. The method of claim 21, wherein the passive component site and the active component site are disposed in a solder mask on the first side, wherein the fluid flow barrier is a trench in the solder mask, wherein the trench describes a perimeter around the passive component site, wherein the perimeter includes a trench side that is adjacent and spaced apart from the active component site, wherein the trench side that is adjacent and spaced apart from the active component site includes a boundary and wherein forming an encapsulation structure includes flowing encapsulation material under conditions that cause the encapsulation material to terminate at the fluid flow barrier.

28. The method of claim 21, wherein the passive component site and the active component site are disposed in a solder mask on the first side, wherein the fluid flow barrier is a trench in the solder mask, wherein the trench describes a perimeter around the passive component site, wherein the perimeter includes a trench side that is adjacent and spaced apart from the active component site, wherein the trench side that is adjacent and spaced apart from the active component site includes a non-linear boundary, and wherein the non-linear boundary is selected from curvilinear, rectilinear, and combinations thereof, and wherein forming an encapsulation structure includes flowing encapsulation material under conditions that cause the encapsulation material to terminate at the fluid flow barrier, and wherein forming a fluid flow barrier local to the passive component site includes forming the fluid flow barrier perimeter to divert flow of the encapsulation material.